



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 110858

Roll No.

--	--	--	--	--	--	--	--	--	--

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15 SOFT COMPUTING

Time : 3 Hours]

[Total Marks : 100

- 1 Attempt any four parts of the following. [5×4=20]
- (a) What is an artificial neuron? How is it different then biological neurons?
 - (b) State the characteristics of an artificial neural network (ANN).
 - (c) Differentiate between supervised and unsupervised learning.
 - (d) Differentiate between single layer feedforward and Multilayer feedforward neural network.
 - (e) What is the necessity of activation functions?
 - (f) What is linear severability? Explain your answer with an example.
- 2 Attempt any two parts of the following. [10×2=20]
- (a) Explain Rosenblatt's perceptron model. Differentiate between linearly separable patterns and non-linearly separable patterns.

- (b) Why perceptron is not able to handle the tasks which are not linearly separable. Justify your answer using XOR Problem.
- (c) Write short notes on the following:
- (i) Recurrent Networks
 - (ii) Over fitting and under fitting
- 3 Attempt any two parts of the following. [10×2=20]
- (a) What are fuzzy sets? Discuss the operations of fuzzy sets.
- (b) Write short notes on the following:
- (i) Fuzzy relations
 - (ii) Fuzzy membership functions
- (c) What is Defuzzification? Explain all the three methods which are used in Defuzzification with an example.
- 4 Attempt any two parts of the following. [10×2=20]
- (a) What is fuzzy quantifier? Differentiate between absolute and relative quantifiers.
- (b) Translate the following statements into logical expressions using predicate logic.
- (i) Every ship has a captain.
 - (ii) Raj likes those which Sita and Ram both like.
 - (iii) Some mushrooms are poisonous.
 - (iv) Not everyone is perfect.
- (c) Write short notes on the following:
- (i) Fuzzy Controllers
 - (ii) Fuzzy Inference

- 5 Attempt any two parts of the following. [10×2=20]
- (a) What is encoding. Explain all the encoding methods.
 - (b) Write short notes on the following
 - (i) Genetic algorithm
 - (ii) Evolutionary Computing
 - (c) List the State-of-the-art applications of soft computing.
-